



**US ARMY CORPS
of ENGINEERS
WILMINGTON DISTRICT**

ENVIRONMENTAL ASSESSMENT

Construction, Operation, and Maintenance
of the

W. Kerr Scott Reservoir Trail Network
W. Kerr Scott Reservoir, Wilkes County, North Carolina

JULY 2009

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1.0 INTRODUCTION

This Environmental Assessment (EA) identifies and evaluates a proposed update to the W. Kerr Scott Reservoir Trail Network including trails which would be incorporated as a supplement to the 1983 W. Kerr Scott Reservoir Master Plan Update. Public and agency input are required by Corps regulations (EP 1130-20-550) when a supplement to a master plan is proposed. This requirement would be satisfied by the public and agency coordination undertaken by the Corps during the development of the proposed trail network plan and the public and agency review and comment during the National Environmental Policy Act (NEPA) process.

The National Environmental Policy Act of 1969, as amended (NEPA), requires consideration of the environmental impacts for major federal actions. The purpose of this Environmental Assessment (EA) is to ensure the environmental consequences of the proposed action are considered and that environmental and project information are available to the public. This environmental assessment (EA) has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations (CFR) parts 1500-1508), U.S. Army Corps of Engineers Department of the Army procedures for implementing NEPA (33 CFR parts 230 al 325), and Engineering Regulation (ER) 200-2-2.

2.0 DESCRIPTION OF PROJECT AREA

W. Kerr Scott Dam and Reservoir are under the stewardship of the U.S. Army Corps of Engineers, Wilmington District. All government property at W. Kerr Scott Reservoir is located in Wilkes County. The dam is about 55 miles west of Winston-Salem, North Carolina, about 65 miles north of Charlotte, North Carolina, and 5.5 miles upstream from the twin towns of Wilkesboro and North Wilkesboro (See figure 1 – Location Map). W. Kerr Scott Reservoir extends approximately 9.7 miles up the Yadkin River. At the normal pool elevation of 1030 feet mean sea level (msl) the reservoir surface area is approximately 1,470 acres, and the shoreline is approximately 55 miles long. The mean depth at normal pool is about 28 feet, but the depth at the dam is about 65 feet.

The W. Kerr Scott Reservoir Trail Network is currently made up of approximately 30 miles of shared use trails located in developed recreation areas designated for intensive and low density recreation use in the 1983 W. Kerr Scott Reservoir Master Plan Update. The trail network currently includes the following: Trails on the north side of the Reservoir are located in Dark Mountain Park and Wildlife Management Area (5 miles); the Fort Hamby Park and Wildlife Management Area (0.8 mile); and the Bushwacker Falls Trail (0.6 mile) at Fort Hamby Park. There are currently two sections of the Over-Mountain Victory Trail (OMVT) on Corps property; one extending from the Dam Area Park along the south side of the reservoir to Bandits Roost Park (7.27 miles) and a second further upstream in Warrior Creek Park and Marley Ford Wildlife Management area (1.7 miles). The OMVT route is the main trunk of the trail system along the south side of the Reservoir. The sections of the trail do not connect because the government property between Bandits Roost Park and Warrior Creek is too steep and narrow to accommodate a trail. Any future connection of these segments of the OMVT would have to be

accomplished through local efforts off of Government property. Other trails include, Shinner's Run Loop (2.6 miles) in the Wilkes Skyline Marina area and the Lake Side Trail near the Visitor Assistance Center (0.3 mile) which are both located on the south side of the Lake. Some segments of connector and loop trails (6.4 miles total) within the existing trails network have not been constructed; the Headwaters Loop in the Warrior Creek area (1.8 miles), the Marley Ford Loop (1.4 miles), and Fort Hamby (0.7 mile); Smithey's Creek Park (0.8 mile), Dark Mountain Park (1 mile), Keowee Park (0.14 mile) and Boomer Park (0.6 mile).

The shared use trails in the proposed alternatives would connect portions of the existing trail network and extend into more remote areas (figures 2, 3, 4, and 5).

3.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

The W. Kerr Scott Reservoir is congressionally authorized for the purposes of recreation, flood control, fish and wildlife, and water supply (Table 1). Construction, operation, and maintenance of shared use trails within and connecting developed recreation areas at W. Kerr Scott Reservoir along with connection of the proposed trail network to local/regional public networks are consistent with the congressionally authorized purposes.

Table 1. W. Kerr Scott Reservoir Congressionally Authorized Purposes

Authorized Purpose	Public Law	Date	Statute	Common Name
Recreation	PL 78-534	Dec. 22, 1944	58 Stat 887	Flood Control Act
Flood Control	PL 79-526	Dec. 22, 1946	58 Stat 887	Flood Control Act
Fish/Wildlife	PL 85-624	Aug. 12, 1958	72 Stat 563	Fish/Wildlife Coordination Act
Water Supply	PL 85-500	Jul. 3, 1958	72 Stat 297	Rivers and Harbors Act

The purpose of the proposed additions to the trail system beyond existing developed recreation areas is to help fulfill the US Army Corps of Engineers mission to provide public recreation facilities. Engineer Regulation (ER) 1130-5-550 states: "The Army Corps of Engineers is the steward of the lands and waters at Corps water resources projects. Its Natural Resources Management Mission is to manage and conserve those natural resources, consistent with ecosystem management principles, while providing quality public outdoor recreation experiences to serve the needs of present and future generations."

The Corps has made specific commitments at the national level to partner in developing opportunities for mountain bicycling and promote responsible use of public lands. In 2002, the Corps of Engineers entered into a Memorandum of Understanding (MOU) with the International Mountain Bicycling Association (IMBA). Through this agreement, the Corps recognized that "the community benefits of recreation trail systems that connect waterways, parks, and neighborhoods; that recreation promotes economic livelihood, providing jobs, and economic stability for American communities;" and that the Corps encourages "youth physical and intellectual development through outdoor recreation and educational activities". Further the Corps agreed to "partner at appropriate local, regional, and national levels to create, manage, and develop opportunities for mountain bicycling at Corps facilities." In 1998 the Corps of

Engineers along with other Federal land management agencies entered into a MOU with Tread Lightly!, Incorporated to promote proactive and responsible use of public lands and waters.

The proposed additions to the W. Kerr Scott Reservoir Trail Network would fulfill these purposes by improving access and increasing opportunities for natural resource-based recreation, increasing safety, reducing unauthorized activities, providing an alternative to unmaintained access routes, ensuring ease of maintenance, helping quantify dispersed use visitation, and avoiding resource damage.

The 1983 W. Kerr Scott Reservoir Master Plan Update includes development of hiking trails within and connecting recreation areas, but does not depict specific locations of trails. The Master Plan identifies development of the portion of the Over Mountain Victory Trail (OMVT) at W. Kerr Scott Reservoir as a priority. The OMVT is a National Historic Trail administered by the National Park Service (NPS). The OMVT route extends through Virginia, Tennessee, North Carolina, and South Carolina. The OMVT sections form the back bone of the trail system along the south side of the Reservoir. The Friends of W. Kerr Scott Lake have received a grant through the National Recreation Trails Program for use in construction and maintenance of the portions of the OMVT on Corps property at W. Kerr Scott Reservoir. The proposed alternative would extend the OMVT.

In the 25 years since the Master Plan Update was finalized recreation preferences and opportunities have changed and the population in the W. Kerr Scott Reservoir service area has increased. Estimated population growth for Wilkes County from 2000 to 2010 is 8.9% (65632 to 71488). Actual population growth from 1990 – 2000 was 10.49% (59393 to 65632). The 2003-2008 North Carolina Statewide Comprehensive Outdoor Recreation Plan (SCORP) indicates that “Greenways and trail networks need to be developed to link open space areas and serve multiple uses where such opportunities exist.” The SCORP identifies Walking for Pleasure, Viewing Scenery, Visiting Historical Sites, Visiting Natural Areas, Fishing- Freshwater, Bicycling for Pleasure, Camping, Hunting, Trail Hiking, Jogging or Running, and Nature Study among the top 30 “Most Popular Outdoor Recreation Activities” in North Carolina. These user groups are served by the trail network.

Shared use of the trails in developed recreation areas at W. Kerr Scott Reservoir began in 1996. The proposed addition of shared use trails beyond developed recreation areas is needed to satisfy the identified demand for shared use trails, facilitate improved public access to public lands, and to provide local/regional trail connectivity. The addition of the proposed approximately 10 miles of trail outside developed recreation areas will result in more than 40 miles of shared use trails within the trail network.

Completion of the proposed trails would also increase the viability of W. Kerr Scott Reservoir as a recreation destination and, in turn, benefit the local community. Links to the OMVT and other facilities at W. Kerr Scott Reservoir are a part of regional efforts including the Yadkin River Heritage Corridor initiative recently undertaken by Caldwell, Wilkes, Surry, and Yadkin Counties along with Appalachian State University and the National Park Service Blue Ridge Natural Heritage Area. The proposed trails are also consistent with the goals of the proposed Heritage Corridor and Blue Ridge Natural Heritage Area; “to protect, preserve,

interpret, and develop the unique natural, historical, and cultural resources of Western North Carolina for the benefit of present and future generations and, in doing so, stimulate increased economic opportunity in the region.”

The proposed additions to the trail network will also address environmental impacts and public safety concerns. Unofficial paths and old roads are often utilized by the public to access undeveloped areas. These unofficial access routes are not mapped, marked, maintained, or patrolled regularly. Use of mapped, signed, marked, and maintained trails in areas where none currently exists would improve the visitor experience and public safety. Official trails provide references and ease of access for the public, Corps personnel, enforcement officers, and emergency responders. The increase in miles of trail available for users would decrease pressure on existing trails and adjacent resources by dispersing use over a wider area.

Quantifying dispersed recreational use is a challenge for resource managers. Focusing users through maintained access points and along known routes provides an opportunity to quantify dispersed use where the Corps has been unable to in the past. Ability to disseminate visitor information and receive visitor comments would also improve.

4.0 ALTERNATIVES

4.1 Proposed Action: Yadkin River Trail, Fort Hamby Connector Trail, and Boomer Trail

The proposed trails to be constructed outside existing recreation areas are shown in figures 2, 3, 4, and 5. The Yadkin River Trail (figure 3) would extend 4 miles going north from Marley Ford Wildlife Management Area along the Yadkin River to the western most government property boundary, and would not require any stream crossings. Initially the trail would end at a trail head located along Highway 268. If local efforts to extend the trail in areas outside of government property are successful the trail may continue west along the river as shown. The proposed Fort Hamby Connector Trail (figure 4) would extend approximately 2.3 miles linking the Dark Mountain Area to the Smithy’s Creek and Fort Hamby Areas. This route would require a crossing on Smithey’s Creek and another unnamed tributary to the Reservoir. The sections of the proposed Boomer Trail (figure 5) outside existing recreation areas would run approximately 0.77 mile south from Keowee Park to Boomer Park and then 2.68 miles of loops extending from Boomer Park along either side of Warrior Creek with a road right of way crossing of NC 268 near Blood Creek Overlook. . This trail would also include five crossings of Warrior Creek and one crossing of an unnamed tributary.

The addition of the proposed Yadkin River Trail, the Fort Hamby Connector Trail, and the Boomer Trail beyond developed recreation areas would increase available distance for bikers and hikers. The Yadkin River Trail provides an opportunity for future connection of a greater Yadkin River greenway extending upstream and downstream of government property.

Trails would be open year round, but may be closed due to weather, for maintenance, and during special events. Trail brochures, bulletin boards, and signage would provide information on trail use and regulations. Trail construction and ongoing maintenance would be accomplished by the Corps in cooperation with partners including volunteers, trail user groups, surrounding

counties, and the Friends of W. Kerr Scott Lake. Any necessary preparation for or restoration of trails following special events would be the responsibility of the event sponsor.

Existing trails and any proposed additional loops within developed recreation areas would continue to be open to hiking and biking. Existing trails were constructed and improved through a partnership with local non-profits and volunteers. The routes are within existing developed recreation areas designated for intensive and low intensity use. Routes utilized existing trails, forest roads/paths and other previously disturbed areas whenever possible.

The trail system is currently connected to the Yadkin River Greenway by a bridge crossing Fish Dam Creek down stream of Reservoir. Future connections to the Yadkin Greenway off of Government property upstream or downstream would have to be accomplished by local governments and volunteer organizations.

Government properties on the north shore of the lake, west of the Fort Hamby area, and along the south shore of the lake between Bandits Roost and Boomer Park are too narrow and slopes are too steep to accommodate trails. Connections to trails in these areas would have to be accomplished by local governments and volunteer organizations off of Government property. As local municipalities continue to develop recreational trails and greenways these connections may occur.

Equestrian use of trails at W. Kerr Scott Reservoir is not proposed. Terrain and soil limitations around W. Kerr Scott Reservoir limit the width of trail corridors to maximum widths of 4 to 6 feet. These trails are not wide enough to provide adequate passing for equestrians; recommended equestrian trail width 8 to 12 feet. Additionally, the winding nature of trails limits sight distances. These factors preclude safe use by horseback riders. Concerns with routing of horses through congested park areas, parking for horse trailers, and facilities to handle horse waste (manure, urine, bedding material, and feed debris) are also limiting factors to development of trails for equestrian users. The Yadkin River Greenway to which the trail network connects via the Fish Dam Creek Bridge also does not allow horses. Equestrian facilities are currently available within the W. Kerr Scott Reservoir service area at Stone Mountain State Park, Pilot Mountain State Park, and Pisgah National Forest.

Sustainable techniques appropriate to the terrain and soil conditions would be used to construct trails. A walk-behind mini-skid steer (trail machine) would be used for tread smoothing and shaping in most areas. A small bulldozer and/or the trail machine would be used for slope bench cuts. Hand tools would be used in areas where mechanized equipment is not appropriate. Hiking and biking trails would be maintained to a maximum width of 4 feet. The trails would be natural surface. Portions of the trail would utilize existing roads and paths as appropriate. Trail routes would follow contours as much as possible and an average slope of less than 10 percent would be maintained. References for sustainable trail construction and adaptive trail management that would be used for the proposed action include: US Forest Service - *Trail Construction and Maintenance Notebook* - 2007 Edition, International Mountain Bicycling Association - *Trail Solutions: IMBA's Guide to Building Sweet Singletrack*, the Appalachian Trail Conference - *Trail Design, Construction and Maintenance*; and *The Tread Lightly! Guide to Responsible Mountain Biking*.

Completion of all proposed trails and trail improvements is contingent on available government funding, support of volunteers, availability of grant funding, and the generous contribution of partners. The majority of the proposed trail network would be completed by the end of 2010. The timeframe for construction of the portion of the Boomer Trail south of Boomer Park and the Yadkin River Trail west of the Hwy 268 trail head has not been determined.

4.2 Yadkin River Trail – North Shore Alternative

This alternative would place the proposed Yadkin River Trail on the north shore of the Reservoir and the Yadkin River. The trail would extend from the Fort Hamby Area upstream along Lewis Fork Creek then cross the creek to continue along the shoreline up the Yadkin River crossing an unnamed tributary to the Reservoir. The government property along the north shore of the lake, Lewis Fork Creek and the Yadkin River, is too narrow and steep to accommodate a trail so use of private property would be necessary.

This route would cross through areas designated as limited development in the W. Kerr Scott Shoreline Management Plan. Limited development shoreline areas are those areas in which private facilities and/or activities may be allowed under a permit and/or license. While location of public trails in limited development areas is acceptable, avoiding the intersection of trails and dock access paths is preferred when possible.

The North Shore Alternative is not practicable due to the cost of acquisition of rights to use private property where sufficient Government property would not be available and construction of a major bridge crossing on Lewis Fork Creek.

4.3 No Action

The No Action plan involves leaving trails in their current natural state by not implementing construction of the trail network. There would be no trails connections constructed and the OMVT would not be extended at W. Kerr Scott Reservoir. Therefore, No Action is the continuation of existing conditions and activities without a particular planning context.

The No Action alternative fails to address identified public demand for shared use trails and connectivity of trail networks. Failure to meet the identified demand would lead to crowding and strain on existing facilities, potential proliferation of unauthorized activities outside of designated trails; use of unauthorized unmapped, unmarked, and unmanaged routes; decreased public safety; increases in sedimentation and erosion problems; adverse impacts to the resource base; decreased level of service; and decreased level of visitor experience.

The No Action alternative fails to provide the desired benefits to the local community. Without the proposed trails, large gaps in any future regional trails efforts would require local governments to look for alternatives on private property and divert funding from other efforts. It would also be a failure by the Corps to partner with local government and non-profit entities and

dedicated volunteers to construct a world class shared use trail network at W. Kerr Scott Reservoir.

5.0 IMPACTS ON SIGNIFICANT RESOURCES

5.1 Physical Environment

Construction of trails would result in increased human activity and associated impacts to the physical environment, especially in areas where trails or other access routes do not currently exist. Sustainable trail design and construction methods along with adaptive management would avoid and minimize adverse impacts, resulting in an overall insignificant level of impacts to the physical environment. Effects of alternatives on the physical environment are discussed in this section.

5.1.1 Geology

According to 1983 W. Kerr Scott Reservoir Master Plan Update section 2-02 E. 1. W. Kerr Scott Reservoir “is located in inner belt of the Piedmont geologic province between the Blue Ridge and Brushy Mountain ranges. The general area is underlain by ancient metamorphic rocks of sedimentary origin, most of which belong to a broad geologic group known as the ‘Carolina Gneiss’.”

Construction of the preferred trails plan would not require removal or alteration of any unique geological features. Trail routes would be reviewed prior to construction to ensure that geologically sensitive features are not impacted and that appropriate sustainable trail construction techniques are utilized. Trail construction would involve minimal grading and disturbance to soils. No blasting of rock would be necessary. Trail routes would follow contours and avoid steep slopes to minimize depth of necessary cuts.

The No Action alternative would allow continued adverse impacts associated with use of unmaintained unofficial access paths and increase in future adverse impacts due to increased unauthorized use resulting from unmet recreation trail demand.

5.1.2 Topography

According to 1983 W. Kerr Scott Reservoir Master Plan Update 2-02 E. 4, surface elevation in the W. Kerr Scott Reservoir “watershed varies from 4000 to the north to the valley flood plain below the reservoir of 1000 feet and up to 2660 feet to the south. The terrain in the immediate vicinity of the reservoir ranges from steep hills and wooded slopes to sheer rock cliffs in the river gorge sections above the main body of the reservoir.”

Trail construction would not alter the overall topography of any area. Minor grading of benches and switchbacks along the contour, parallel to slopes, would be necessary. Grade reversals and other appropriate techniques would be utilized to prevent erosion as necessary.

The No Action alternative would allow continued adverse impacts to soil associated with existing unmaintained unofficial access paths and increase future adverse impacts due to increased unauthorized use resulting from unmet recreation trail demand. Over time, topography of impacted areas would change as hillsides erode into bottoms.

5.1.3 Soils

According to 1983 W. Kerr Scott Reservoir Master Plan Update soils around the reservoir are in the Civil-Pacolet Association, which “is well drained, moderately deep to deep, upland soils with firm, clay to clay loam subsoil’s on fairly narrow ridges and choppy sloping toe steep side slopes.” Buncombe (BuB) soil makes up the majority of the sediment found throughout the area consisting of sandy alluvium derived from igneous and metamorphic rock. Natural Drainage class is excessively drained with minimal flooding and no natural ponding. Depth to a root restrictive layer is greater than 60 inches with available water to a depth of 60 inches is low. Shrink-swell potential is also low. There is no zone of saturation within a depth of 72 inches and an organic matter content of about 1-percent in the surface horizon. Nonirrigated land capability classification is 4w which denotes soils that have severe limitations that restrict the choice of plants or that require very careful management due to water on or in the soils which interferes with plant growth.

For the preferred alternative adverse impacts to soils would be avoided by utilization of sustainable trail construction and maintenance techniques, monitoring of trail conditions, and closure and rerouting as necessary. All construction, operation, and maintenance would be done in accordance with the North Carolina Erosion and Sediment Control Planning and Design Handbook. Stringent erosion-control measures would be installed where soil is disturbed and would be maintained until project completion. Excavated material would not be stockpiled where sediment would erode to surface waters. Effects of hiking and/or biking on soils would be negligible in most areas, causing little or no physical disturbance, minimal compaction, and little unnatural erosion. Minor impacts such as compaction necessary for construction and maintenance of benches and some unnatural erosion of soils during large rain events may occur in areas with steeper slopes. To minimize erosion of the soils trails may be closed following large rain events.

Routine use intensity for trails would be low. High intensity events such as bike races would occur several times annually. Trails would be designed and modified as necessary to accommodate intensive use events. Trail conditions would be monitored regularly, with additional monitoring before, during, and after special events and following storm events. Trail segments would be repaired, closed, and rerouted as necessary to address any deterioration or other concerns. Creation of unauthorized trails extending from approved trails would be monitored and discouraged through education efforts. Shifting visitors from unofficial access routes to sustainable well maintained trails would reduce sedimentation and erosion in some areas.

Construction and use of trails would build a positive presence in areas that are currently less frequented by the public, discouraging unauthorized and detrimental use of motorcycles and ATV’s and their associated erosion.

The No Action alternative would allow continued adverse impacts associated with existing and future increases in use of unmaintained unofficial access paths and unauthorized activities.

5.1.4 Floodplains

The Corps of Engineers controls the Upper Yadkin River by capturing excess floodwaters and regulating daily flows. Water moves from the upstream reservoir through an approach channel and into an intake tower. A concrete conduit at the base of the dam then carries the water allowed through the gates 749 feet to the downstream stilling basin. Regulated water releases provide a normal conservation pool for public recreation use, fish and wildlife habitat, water supply, and integrity of water.

As stated in the Executive Order 11988 in order to avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever it is practicable, each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains. The top of the flood control pool (spillway crest) for W. Kerr Scott Reservoir is 1075 feet mean sea level (ft msl). The normal pool elevation is 1030 ft msl. Some segments of the trail will be located below the 1075 ft msl elevation.

The preferred trails construction plan will not require any addition of fill material within the flood pool of W. Kerr Scott Reservoir. Small amounts of existing soil may be shifted to higher and lower elevations as trail treads are leveled. Segments of trail located below the 1075 ft msl elevation occur most often along streams and near crossings of streams and gullies. All crossings will be high ground to high ground. Any bridges located below the flood pool elevation would be secured to ensure that they remain in place during flood events. Impacts to the flood plain/flood pool from sedimentation and erosion of material would be avoided through use of sustainable trail construction techniques, trail monitoring and periodic maintenance. Providing users with well maintained access trails would help avoid erosion due to over use of existing trails and unauthorized use, especially crossing of low areas, streams, and steep slopes.

The No Action alternative would allow continued adverse impacts associated with existing and future increases in use of unmaintained unofficial access paths and unauthorized activities which contribute to erosion into the floodplain.

5.1.5 Surface Hydrology

W. Kerr Scott Reservoir impounds the Yadkin River. Named streams entering the lake are Smithey's Creek, Lewis's Fork Creek, Yates Creek, Warrior Creek, Blood Creek, Pumpkin Creek, and Whites Creek. Fish Dam Creek enters the river just down stream of W. Kerr Scott Dam. W. Kerr Scott at normal pool elevation is 1,030 feet msl, approximately eight miles long,

a shoreline length of about 55 miles, and a water surface area of 1,470 acres. W. Kerr Scott Lake storage may vary between a minimum pool level of 1,000 feet and the spillway crest of 1,075 feet. Reservoir elevation may vary at any point of time due to heavy rainfall or prolonged drought.

The proposed Fort Hamby Connector Trail would cross Smithey's Creek and another unnamed tributary to the Reservoir. The proposed Boomer Trail including loops would have five crossings of Warrior Creek and one of an unnamed tributary. The proposed route for the Yadkin River Trail would run along the south shore of the river and would require no stream crossings. This would result in a total of eight stream crossings if the preferred trails plan is constructed. Impacts to surface hydrology would be avoided through use of bridges for stream crossings and bridges and other sustainable crossing methods in dry gullies as appropriate. Stream crossings would span high ground to high ground and all applicable sedimentation and erosion control requirements would be met during construction, operation and maintenance of the trail.

The No Action alternative would allow continued adverse impacts associated with existing and future increases in use of unmaintained unofficial access paths that pass through creeks and gullies leading to erosion of stream banks and adverse impacts to stream bottoms.

5.1.6 Water Quality

W. Kerr Scott Reservoir below Elevation 1030 is classified as Class B Trout waters (B Tr). According to state standards "Class B waters are suitable for primary recreational activities including swimming, skin diving, water skiing, and similar uses involving human body contact with water where such activities take place in an organized manner or on a frequent basis." The Trout waters designation "is a supplemental classification intended to protect freshwaters which have conditions which shall sustain and allow for trout propagation and survival of stocked trout on a year-round basis. Secondary recreational activities include fishing, wildlife, and fish consumption, aquatic life including propagation, survival and maintenance of biological integrity, recreation, and agriculture, which also fall under Class B uses."

Impacts to water quality from sedimentation and erosion may occur due to soil erosion during construction and trail use but these impacts, if any, would be minimal and of short duration. Erosion would be avoided through use of sustainable trail construction methods including bridges for streams and gullies. Stream crossings would span high ground to high ground and all applicable sedimentation and erosion control requirements would be met during construction, operation and maintenance of the trail. All construction, operation and maintenance would be done in accordance with the North Carolina Erosion and Sediment Control Planning and Design Manual. Stringent erosion-control measures would be installed where soil is disturbed and would be maintained until project completion. Excavated material would not be stockpiled where sediment would erode to surface waters.

The No Action alternative would allow continued adverse impacts associated overuse of existing facilities and increases in use of unmaintained unofficial access paths that pass through

creeks and gullies leading to erosion of stream banks and stream bottoms which may impact water quality in the immediate area.

5.1.7 Air Quality

Areas of the country where air pollution levels persistently exceed the national ambient air quality standards may be designated "non-attainment." All of W. Kerr Scott Reservoir is in an attainment area. There are no known air quality problems in the study area.

The project is in compliance with Section 176 (c) of the Clean Air Act, as amended. A conformity determination is not required for the following reasons:

40 CFR 93.153 (b) of the CFR states, "For Federal actions not covered by paragraph (a) of this section, a conformity determination is required for each pollutant where the total of direct and indirect emissions in a nonattainment or maintenance area caused by a Federal action would equal or exceed any of the rates in paragraphs (b) (1) or (2) of this section." The area has been designated by the State of North Carolina as an attainment area.

No Volatile Organic Compounds (VOC's) or Nitrogen Oxides (NOX) would be produced by the proposed construction, operation or maintenance; therefore, a conformity determination would not be required.

Grading in some areas would require use of a motorized trail building machine and/or a small bulldozer. Equipment use would result in the temporary introduction of dust and exhaust into the air during trail construction and maintenance, however these changes in air quality would be minimal, localized, and of short duration. Bicycling may have greater potential to generate dust than hiking. Hiking and/or biking would introduce a negligible amount of dust into the air, resulting in no change to the overall air quality. All North Carolina State guidelines pertaining to dust would be followed. No impacts are expected to result from implementation of the preferred or No Action alternative.

5.1.8 Noise

Noise levels around W. Kerr Scott Reservoir typically vary dependent on the level of development and visitation. Highest noise levels are experienced in developed recreation areas on holiday weekends and during special events with noise levels falling dramatically during weekdays and during the off-season. The natural soundscape predominates in undeveloped areas adjacent to the Reservoir and in the quiet coves around the Reservoir. Primarily noise sources are vehicles using NC 268 and boat engines operating on the reservoir.

The use of motorized equipment would result in loud noises during trail construction, temporarily affecting the natural soundscape in the surrounding area. Although changes to natural sound would be noticeable during construction activity, the impact would be minimal and of short duration. Trail activities will not result in significant or sustained amounts of noise.

Any adverse impacts of increased noise are considered insignificant and negligible relative to the No Action alternative which may have minor adverse impacts due to use of unauthorized trails, lack of positive presence of trails and trail users on congested overused trails, and more frequent presence of enforcement personnel.

5.1.9 Cultural Resources

Archaeological surveys and historic documentation demonstrate that W. Kerr Scott has the potential to provide significant information for both the prehistoric and historic periods. Five of the 16 developed areas of the project have been surveyed, and a sample survey of approximately seven per cent of the upland portions of the reservoir has been conducted. Site specific investigations have also been conducted at Fort Hamby and other historic sites. Six archaeological sites (31Wk95, 31Wk96, 31Wk105, 31Wk106, 31Wk107, and 31Wk108) were recorded during the sample survey, and one previously identified site (31Wk7) was revisited. Three of these sites (31Wk95, 31Wk96, and 31Wk108) were determined eligible for nomination to the National Register of Historic Places. Site 31Wk95 (Fort Hamby) contained high densities of historic remains and intact architectural features related to a nineteenth century occupation within the reservoir. These attributes suggest that the site can produce archaeological information that can contribute to the understanding of the local historical development. Site 31Wk96 contained high densities of historic and prehistoric remains. Sites 31Wk96, a prehistoric and historic site located in a cove on Smitheys Creek, and 31Wk108, a prehistoric site near Skyline Marina, also contain intact cultural deposits with high densities of artifacts. Both sites exhibit sufficient integrity to contribute to the understanding of the history and prehistory of the region.

In addition to sample surveys, site specific investigations at Fort Hamby, Church-Curtis cemetery, and Fish Dam Creek demonstrate significant potential for the reservoir area to produce information that will be useful for interpretive programs and that meet eligibility criteria of the National Register of Historic Places.

Whereas the project area has demonstrated the potential to contain significant cultural resources, all activities will be coordinated with Wilmington District Archeologist prior to initiation of ground disturbing activities. Field inspection of portions of the trail route will be completed in areas that have not been surveyed. Additional Phase I or II surveys would be conducted as necessary. Cultural Resources studies, where required, shall be implemented per Section 106 of the National Historic Preservation Act. The State Historic Preservation Officer and other interested parties would be invited to comment on and review trail plans and any subsequent studies.

The preferred alternative would not result in impacts to cultural or archeological resources. Trail routes would be modified as necessary to avoid cultural resource sites. If any cultural or archeological sites are discovered during trail construction, operation or maintenance, activities would be immediately suspended pending investigation of the site.

The No Action alternative, which fails to address known demand for trails, may result in adverse impacts to unknown cultural resources due to existing and future increases in unauthorized use.

5.1.10 Hazardous Waste Sites

Review of documentation and observations during planning of the trail route indicate that there is no evidence of hazardous, toxic, or radioactive waste (HTRW). It is not expected that any hazardous and toxic waste sites would be encountered during construction, operation or maintenance of the preferred trails plan. Neither the preferred trails alternative nor the No Action alternative would result in the production of hazardous waste.

5.1.11 Aesthetics

The steep slopes, quality vegetation, clear water and scenic mountain views highlight W. Kerr Scott Reservoir's dramatic visual quality. The lack of development in the area enhances these aesthetics. Because of the steep slopes around the Reservoir, many locations provide dramatic views of the Reservoir and surrounding mountains.

The preferred trails alternative would not result in permanent adverse impacts to aesthetics or any view of the watershed. Trail construction would not result in noticeable gaps in the tree canopy. Use of sustainable trail construction techniques would minimize temporary aesthetic impacts associated with construction. These impacts are considered negligible and would provide an overall service to the area by minimizing unofficial trails.

Any impacts of the preferred alternative are considered negligible relative to the No Action alternative which has potential adverse impacts to aesthetics as use of unmaintained unofficial access paths and associated erosion will continue and potentially increase.

5.2 Natural Resources

As discussed in the following sections, W. Kerr Scott Reservoir has an abundance of natural resources. Construction, operation and maintenance of trails would lead to increased human activity and associated impacts to natural resources, especially in areas where trails do not currently exist. Use of the sustainable trail design and construction, education of potential trail users regarding natural resources, and periodic maintenance of the trail would avoid and minimize these impacts.

The effects of the preferred plan and the No Action plan on the most significant resources are outlined below and discussed in detail in this section.

5.2.1 Vegetation

W. Kerr Scott Reservoir lies on the boundary of two forest regions, Northern and Central. In the Northern forest region the white pine and hemlock are predominant forest types. In the Central Forest Region the predominant type is white pine with various species of hickory, sycamore, and

beech. There are several areas where hardwoods predominate while in other areas pines are predominating. However, the largest forest type is that of a mixed forest.

The preferred trail route passes through mature forest areas including evergreen forest dominated by white pine (*Pinus strobus*) and Hemlock (*Tsuga canadensis*); mixed evergreen/deciduous forest areas with chestnut oak (*Quercus michauxii*), scarlet oak (*Quercus coccinea*), pitch pine (*Pinus rigida*) and shortleaf pine (*Pinus echinata*); and deciduous forests including beech (*Fagus grandifolia*); white oak (*Quercus alba*), red oak (*Quercus falcata*), hickory (*Carya spp.*), yellow poplar (*Liriodendron tulipifera*), black birch (*Betula lenta*), black cherry (*Prunus serotina*), white ash (*Fraxinus Americana*), and red maple (*Acer rubrum*); Understory species include sour wood (*Oxydendrum arboreum*), dogwood (*Cornus florida*), rhododendron (*Rhododendron spp.*) and mountain laurel (*Kalmia latifolia*), chinquapin (*Castanea pumila*), witch hazel (*Hamamelis virginiana*), and sassafras (*Sassafras albidum*).

Construction and maintenance of the preferred trails alternative would require the removal of vegetation. Hiking/biking trails would have a maximum width of 4 feet. Total footprint of the trail tread for the three proposed trail additions outside developed recreation areas would be approximately 4.8 acres. Trails would impact individual plants and trees but would not result in any significant change to a population, community, or species of vegetation. Removal of larger canopy trees would be avoided. Tree trimming, removal, and root damage would be minimized by routing choices. Use of existing paths, roads, and rights of way, as appropriate, would also minimize the need for destruction of vegetation. Vegetation would be left unaltered as much as possible in riparian areas along tributaries and the shoreline. Providing trails would minimize vegetation damage in areas currently accessed by unauthorized paths. Construction of a gravel parking area at the Hwy 268 Yadkin River Trail Trailhead would impact approximately 0.5 acre of forest.

Exotic species could be transported and spread along trails as seeds and/or vegetative matter cling to trail users and equipment, especially during wet and muddy conditions. The level of impact would depend on the availability of seeds, the amount of use the trail receives, trail conditions, and the successful establishment of the species along the trail. Spread of invasive species would be avoided and minimized by not routing trails through areas containing invasive species; cleaning of bicycles, tools, and equipment; closure during wet conditions as appropriate; and eradication and control of invasive species.

The No Action alternative would eliminate impacts to vegetation associated with new trails but would fail to address known demand for trails, so may result in adverse impacts to vegetation due to continued and increased unauthorized trail use. Although construction of the proposed trails may not eliminate use of unauthorized trails, it is expected to result in a decrease in unauthorized trails.

5.2.2 Fish and Wildlife

A variety of fish species inhabit W. Kerr Scott Reservoir, including largemouth bass (*Micropterus salmoides*), smallmouth bass (*Micropterus dolomieu*), crappie (*Pomoxis spp.*),

sunfish (*Lepomis spp.*), walleye (*Stizostedion vitreum vitreum*), catfish (*Ictalurus spp.*) and carp (*Cyprinus carpio*).

No negative impacts to the aquatic community are expected to occur from either the preferred trail alternative or the No Action alternative. As previously stated, all stream crossings would span from high ground to high ground, thus avoiding impacts of structures in streams.

Common wildlife species found at W. Kerr Scott Reservoir include white-tailed deer (*Odocoileus virginianus*); black bear (*Ursus americanus americanus*); gray squirrel (*Sciurus carolinensis carolinensis*), eastern cottontail (*Sylvilagus floridanus mallurus*), raccoon (*Procyon lotor lotor*) and opossum (*Didelphis virginianus*); beaver (*Castor canadensis*) and skunk (*Mephitis mephitis*). Birds found in the area include wild turkey (*Meleagris gallopavos*), wood peckers (*Melanerpes spp.*), Carolina chickadee (*Poecile carolinensis*), red-eyed vireo (*Vireo olivaceus*), ovenbird (*Seiurus aurocapillus*), mallard (*Anas platyrhynchos*), and wood duck (*Aix sponsa*).

During construction increased noise may disturb wildlife in the local area. Construction-related noise would be temporary and negligible. Existing sound conditions would resume following construction activities.

A new trail would increase the frequency of use by visitors in some areas. The presence of humans can influence the number and variety of wildlife in the immediate area of the trail. Given existing levels of dispersed use (both authorized and unauthorized activities), as well as adjacent land use along the trail route, the overall impact on wildlife would be localized and negligible.

Increases in noise and level of activity during special trail events (running or cycling races) may also result in temporary minor disturbances with existing conditions resuming following these activities.

In addition to being a popular recreation activity, hunting is a useful tool for managing wildlife populations such as white-tail deer (*Odocoileus virginianus*) on public lands. A total of approximately 532 acres of Corps Wildlife Management Areas (WMA's) are enrolled in the North Carolina Wildlife Resources Commission Game Land's Program. These lands are located in Dark Mountain, Smithy's Creek, Fort Hamby, Marley Ford, and Boomer WMA's. Elimination of hunting in areas currently open to hunting is not being considered. Potential conflicts associated with recreational hunting would be avoided and minimized through public education regarding hunting seasons, hunter safety education, and enforcement of game regulations and laws against illegal hunting. The proposed trail would benefit fish and wildlife management activities by providing access for hunting and fishing, and would also provide interpretive opportunities to increase awareness of the value of natural resources and the importance of other active management tools such as timber harvest and prescribed fire.

The No Action alternative may reduce the temporary disturbance that would occur during construction of trails and greater use by visitors in the area as compared to the preferred alternative. However, adverse impacts to the natural abundance, diversity, and ecological

integrity of any fish or wildlife population or species are not expected for either the preferred or the No Action alternatives.

5.2.3 Endangered and Threatened Species

Coordination with the US Fish and Wildlife Service (USFWS) indicates that there are no known occurrences of federally listed endangered species in the vicinity of W. Kerr Scott Reservoir. Neither the preferred trails alternative nor the No Action alternative would affect known endangered species, threatened species, species of concern, or their communities.

The 2000 Inventory of Rare Species and Natural Communities, W. Kerr Scott Reservoir Wilkes County, North Carolina indicates that small amount of marginal habitat for the Federally threatened Southern Bog Turtle (*Clemmys muhlenbergii*) exists on Government property although none were found during the survey (Baranski 2000).

The northern population of the bog turtle (from New York south to Maryland) was listed as Threatened (T) in 1997 (Federal Register 55822-55825). The southern population (from Virginia south to Georgia) was listed as Threatened - Due to Similarity of Appearance (T(S/A)). The T(S/A) designation bans the collection and interstate and international commercial trade of bog turtles from the southern population. In addition to its official status as T(S/A), the U.S. Fish and Wildlife Service considers the southern population of the bog turtle as a Federal species of concern due to habitat loss (USFWS). The bog turtle is also listed as Threatened by the state of North Carolina Natural Heritage Program.

The proposed action would have no affect on bog turtle habitat. “Bog turtles live in the mud, grass and sphagnum moss of bogs, swamps, and marshy meadows. These wetlands are usually fed by cool springs flowing slowly over the land, creating the wet, muddy soil needed by the turtles”(USFWS). Trail routes would not be placed in bog turtle habitat. Any stream or wetland crossings will be high ground to high ground. Corps staff would continue to coordinate with the North Carolina Wildlife Resources Commission and the US Fish and Wildlife Service regarding bog turtles at W. Kerr Scott Reservoir.

The 2000 Inventory of Rare Species and Natural Communities also indicates that habitat for the following Federal Species of Concern (FSC) occur on government property although none of these were found during the survey: The Diana fritillary butterfly (*Speyerian diana*) – marginal habitat: forest areas and adjacent edges/openings, host species - violets (*Viola* spp.). Butternut (*Juglans cinerea*) –suitable habitat: found in rich woods and cove forests. Cerulean warbler (*Dendroica cerulea*)- marginal habitat – mature hardwood forests on steep slopes and in coves. The proposed action would not affect these species of concern.

In accordance with section 7 of the Endangered Act the Corps would reconsider these determinations if: (1) new information reveals impacts of this identified action that may affect endangered or threatened species or critical habitat in a manner not previously considered, (2) this action is subsequently modified in a manner not considered in this review, or (3) a new species is listed or critical habitat is determined that may be affected by the action.

The No Action alternative or the preferred alternative would not adversely impact the Bog turtle. No other federally protected species are found at W. Kerr Scott; therefore, neither the no impact nor the preferred action would impact threatened or endangered species.

5.2.4 Wetlands

Wetlands at W. Kerr Scott Reservoir occur along the shoreline, the river upstream of the normal pool, and tributary streams. Wetland types include emergent wetlands, forested and shrub wetlands, and riverine wetlands. The majority of wetlands that historically existed on government property are now below the normal pool elevation of the lake. Review of national wetland inventory data indicates there are no known wetlands within the footprint of proposed Connector Trail linking Dark Mountain to Fort Hamby. NWI mapping indicates that forested, shrub, and emergent wetlands adjacent to streams in proximity to the route of the Yadkin River Trail and the Boomer Trail.

There would be no alteration or filling of wetlands or waters of the United States for the preferred trail alternative. Trails will not be placed in wetlands. Any wet areas or seeps encountered would be avoided. Streams would be bridged from high ground to high ground.

The preferred alternative will not adversely impact wetlands and would be expected to result in decreases of unauthorized trails. The No Action alternative would fail to provide alternatives to unauthorized trail use and may result in adverse impacts to wetlands due to continued erosion from unauthorized access routes, particularly in riparian areas.

5.3 Socioeconomic Characteristics

The market area of W. Kerr Scott Reservoir extends approximately 50 miles in all directions from the project boundaries and includes the cities of Wilkesboro, North Wilkesboro, Boone, Hickory, Statesville, and Winston-Salem (figure 1). The market area provides the majority of project visitation and has seen a steady rate of population and economic growth which is expected to continue.

Employment in area counties is centered on the poultry industry but includes other industries in the immediate area including textiles, manufacturing, forest products, and agriculture. Major concentrations of commercial and industrial land uses are concentrated in areas occurring in or around Wilkesboro and North Wilkesboro.

The changing social and economic character of the market area will have effects on visitation to the lake, showing a trend towards day-use visitation. Economic conditions in adjacent counties will show shifts in lake visitation in concurrence with changing economic conditions.

The preferred trails alternative would have a positive impact on socioeconomic resources in the area surrounding W. Kerr Scott Reservoir. Increases in visitation and tourism due to additional trails would have a positive impact on associated local and regional businesses. Trails would also provide opportunities for recreation in support of a healthy lifestyle. The expansion

of recreation opportunity and trail infrastructure is consistent with regional economic development efforts such as the four county Heritage Corridor plan and the Blue Ridge Natural Heritage Area. The No Action alternative would not provide an increase in recreation opportunities or the associated benefits.

5.3.1 Land Use

Forests and agriculture are the major surrounding land uses at W. Kerr Scott Reservoir. Around the northern portion of the project, agriculture predominates, while in the southern and western portions, forests predominate. Major concentrations of commercial activities and industrial land uses occur at Wilkesboro and North Wilkesboro with isolated commercial structures found on roads leading to the project.

The 1983 W. Kerr Scott Reservoir Master Plan Update Plate 4-01 identifies land use allocations on government property including project operations, easement lands, intensive recreation, and low density recreation. The preferred trail alternative would be located on land identified as project operations outside of areas designated for recreation. Project operations in these areas would be inundation by the reservoir during flood storage operations. Construction, operation, and maintenance of shared use trails is considered appropriate in these areas and will not interfere with reservoir flood storage operations. Inundation of the natural surface trails will have minimal impacts on the trails structure. Trail closure during and after inundation will ensure public safety and minimize damage to the trail surface. Trails would be inspected and repaired as necessary prior to re-opening after inundation.

Neither trail alternative would result in any significant change to local or regional land use. Creation of a network of shared use trails is consistent with regional efforts to promote tourism and improve quality of life. Increases in the number of trail users at W. Kerr Scott Reservoir may result in increased demand for regional trail connections.

The No Action alternative would fail to address the known recreation demand which could lead to increases in unauthorized use of public and private lands in the area.

5.3.2 Vehicular Traffic

Vehicular traffic would increase with any increases in visitation resulting from additional trail opportunities from the preferred trail alternative. Increases would be greater during special events. The increase in traffic would not exceed capacity of existing roads. Small additions to and hardening of existing parking areas within developed recreation areas would occur as trail use increases. A small 5 to 10 car parking area would be constructed at the Hwy 268 trailhead along the Yadkin River Trail.

Automobile trips by users traveling between recreation sites may decrease as visitors utilize connecting trails. Connections to growing local and regional trail network may also

reduce traffic by providing an alternative transportation route for recreation users coming to the Reservoir.

The No Action alternative would not provide alternative transportation routes or trail connectivity.

5.3.3 Recreation

There are currently 15 developed recreation areas within the projected boundaries at W. Kerr Scott Reservoir. The Corps of Engineers operates all of the recreational areas at the Reservoir with the exception of Wilkes Skyline Marina. Facilities provided include boat launching ramps, picnic areas, tent and RV camping areas, trails, an amphitheater, and fishing areas. Dispersed recreation activities include wildlife observation, hunting, and geo-caching. There are no publicly owned lakes comparable to W. Kerr Scott Reservoir within the market area. Other recreational resources within the market area include local parks and State and National historical sites dating from colonial times. Approximately 850,000 visitors enjoy W. Kerr Scott Reservoir annually.

The proposed alternative serves the Corps' recreation mission by providing opportunities for hiking, bicycling, interconnectivity of recreation areas, and access for other activities including hunting, fishing, and wildlife observation. Placing mapped, signed, marked, monitored, and maintained trails in areas where none currently exist would improve the visitor experience and public safety. New trails would shift recreation users from unofficial access routes to official sustainable, well maintained trails. Trails in otherwise undeveloped areas provide points of reference and ease of access for the recreating public, Corps personnel, enforcement officers, and emergency responders.

The additional trails would help disperse users over a larger area resulting in an improved user experience, reduced crowding, and lower likelihood of adverse impacts from overuse. The completed trail network would provide visitors an alternative to driving between recreation areas. When connected to local/regional trail networks, the trails would provide an alternative to visitors driving to the Reservoir and for access to the local community while visiting the Reservoir. The scale of the trail network would also provide an improved venue for existing and new trail events.

The amount of increase in visitation that would occur as a result of trail construction is not known. Focusing recreation users through maintained access points (trail heads) and known routes would provide an opportunity to quantify dispersed use that the Corps has previously been unable to accurately count. Visitation, trail use, reported user conflicts, and trail conditions would be monitored to avoid adverse impacts from use. Trail conditions would be closely monitored before, during, and after special trail events and following storms. Trail segments would be repaired, closed, and rerouted as necessary to address any deterioration or other concerns.

Potential for conflicts among trail users does increase on shared use trails. The primary tool for avoiding and minimizing user conflicts would be education of visitors regarding trail

etiquette. Sections of the proposed trail may be temporarily closed as appropriate during special events to reduce conflicts and ensure public safety. Enforcement of leash requirements in Corps regulations, Title 36 CFR Ch. 111, 327.11 Control of Animals, would reduce interactions with dogs or other pets.

Construction of trails in areas open to public hunting provides better access for hunters but also increases potential for conflict between hunters and other trail users as well as safety concerns relative to hunting. As previously stated hunting is a popular recreation pastime and a vital tool for managing wildlife populations, white-tailed deer in particular, so elimination of hunting is not being considered. Potential conflicts would be avoided and minimized through public education regarding hunting seasons, hunter safety education, and enforcement of game regulations and laws against illegal hunting. To reduce disturbance to game species and potential use conflicts, non-hunters would be encouraged to voluntarily avoid trails in areas open to hunting during early morning and early evening throughout hunting season, except on Sundays when hunting is not permitted. Likewise, restrictions including; no hunting from trails, no firing across trails, and permitting only unloaded weapons on trails; along with the voluntary temporal segregation of use would avoid and minimize user conflicts and safety concerns

The preferred alternative would provide an enhanced recreation experience, as compared to the No Action alternative by increasing recreational opportunities within W. Kerr Scott Reservoir. The No Action alternative would fail to meet known recreation needs for additional trails and result in a declining quality of recreation at W. Kerr Scott Reservoir.

5.3.4 Water Supply & Conservation

There are no water supply intakes currently located in W. Kerr Scott Reservoir. The City of Winston Salem and Wilkes County have a water supply contract allowing them to utilize the water supply storage in W. Kerr Scott Reservoir. The intake is currently down stream of the Dam. Wilkes County is proposing to construct an intake structure in the lake, just upstream of the Dam. Plans for the proposed intake have not been finalized.

The preferred trail alternative would not result in adverse impacts to the water supply pool. Potential impacts would be avoided through use of sustainable trail construction methods and periodic trail maintenance, which would reduce or eliminate sedimentation and erosion into the water supply pool.

The No Action alternative may result in adverse impacts to soil and increases in erosion into the lake and its tributaries due to unmaintained and unauthorized access routes but should have no impacts to water supply and conservation.

5.3.5 Energy Needs

The Federal Energy Regulatory Commission (FERC) has issued a preliminary permit to Wilkesboro Hydroelectric Company, LLC, (Project No. 12642). This private company is investigating the feasibility of the construction of privately operated hydroelectric generation facilities at W. Kerr Scott Dam.

The preferred trail alternative would not have a significant impact to energy needs. Trails would not impact the proposed hydropower production. Promotion of hiking and biking would encourage non- motorized recreation. The trail would provide visitors an alternative to driving between recreation areas. When connected to local/regional trail networks, the trail would provide an alternative to visitors driving to the lake and to access the local community while visiting the lake.

The No Action alternative would not encourage alternative transportation.

5.3.6 Safety

The Corps' staff works to ensure a safe and enjoyable experience for all visitors to W. Kerr Scott Reservoir. Corps Park Rangers provide visitor assistance and information; patrol recreation areas and trails; and enforce Corps regulations for use of public lands. Local fire departments, sheriff's departments, and North Carolina Wildlife Resources Commission enforcement officers also regularly respond to public safety needs on and around the Reservoir.

Visitor safety would be improved by the preferred trail alternative. Trails operated and maintained in a safe and serviceable condition provide safer access than unmaintained and unauthorized paths. Mapping, signing, and marking trails improves public safety by providing a location reference for the public, Corps personnel, and emergency service personnel. Proactive visitor education and enforcement of applicable laws and regulations would address safety concerns relative to trail user conflicts as outlined in section 5.3.3 Recreation of this document.

The No Action alternative fails to address potential public safety concerns arising from use of unmapped, unmarked, and unmanaged access routes and continued and increasing unauthorized activities.

5.3.7 Consideration of Property Ownership

The preferred trail alternative would be constructed entirely on Government owned property. The proposed trails would not pass through areas designated as "limited development" in the Shoreline Management Plan.

Location of trails adjacent to private property often raises concerns of the owners. Typical concerns of property owners adjacent to public lands and trails include crime and loss of property value (Tracy and Morris, 1998). Trails would increase the number of people in the some areas where trails currently do not currently exist. Attention to the location of the trail relative to property boundaries and screening by forest vegetation will help maintain privacy of adjacent residences. Additionally, research by The Rails to Trails Conservancy and the National Park Service indicates that the positive presence of people including users and patrols on trails

are a deterrent to undesirable behaviors in both urban and rural areas (Tracy and Morris 1998). Trails will be regularly patrolled and monitored by agency staff and volunteers.

The Trust for Public Lands reports that “Access to public parks and recreational facilities has been strongly linked to reductions in crime and in particular to reduced juvenile delinquency” and that “Numerous studies have shown that parks and open space increase the value of neighboring residential property” (Sherer 2006). However, “in rural areas where there is plentiful open space, the incentive to pay a premium to be close to a park is likely to be lower than in densely populated urban areas where open space is rare” (Crompton 2007). Overall the presence of public lands and the availability of ready access to the benefits of public lands including the new trail would be a positive benefit to private property owners in the vicinity.

The No Action alternative would avoid concerns due to location of designated trails on public land adjacent to private property. However, the public lands in the area would continue to be open to the public and would be used by visitors for authorized uses. Unauthorized activities would continue to occur and would likely increase on public and private lands due to failure to address known recreation demands and failure to provide designated access routes. The benefits of the positive presence of the trail and trail users and of the increased presence of management staff would not occur with the No Action alternative.

5.3.8 Environmental Impact Comparison of Alternatives

The table below provides a brief summary and comparison of impacts to the physical and natural environment for the alternatives considered.

Table 2. Comparison of Impacts to Resources

Resource	Alternatives	
	Preferred Trail Plan	No Action
Recreation	Meets demand, encourages regional trail connectivity.	Does not meet demand. Perpetuates unauthorized use of public and private lands.
Socioeconomic	Increases visitation, tourism, & associated economic benefit to area	No increases in visitation or the associated economic benefit.
Soils	Reduces erosion	Perpetuates and increases erosion
Surface Hydrology	No impacts	Perpetuates and increases erosion and impacts at stream crossings
Water Quality	Reduces erosion and no impacts at stream crossings	Perpetuates and increases erosion and impacts at stream crossings
Cultural Resources	Trail area surveyed. No impacts expected.	Areas not surveyed. Potential for destruction due to unauthorized use and illegal excavation
Vegetation	Loss of ~4.8 acres of vegetation	Loss of unknown amount of vegetation
Fish and Wildlife	Temporary disturbance to wildlife during construction, maintenance, and special events.	Minor impacts to fish and wildlife from erosion, habitat loss, disturbance, and loss of vegetation due to unauthorized activities and unmaintained accesses.
Endangered and Threatened Species	No impacts	No impacts
Wetlands	No Impacts	Perpetuates erosion and disturbance, including stream crossings due to unauthorized activities and unmaintained accesses.

6.0 EXECUTIVE ORDERS

6.1 Executive Order 11988 (Flood Plain Management): Neither trail would involve placement of fill material in the flood plain, affect storm flows associated with the 100 -year flood frequency elevation, nor affect the impacts of floods on human safety, health, and welfare.

6.2 Executive Order 11990 (Protection of Wetlands): This order requires agencies to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities. Neither proposed trail would involve placement of fill material in wetlands or waters of the United States.

6.3 Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low Income Communities and Low Income Populations): The EPA defines environmental justice as the fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people; including a racial, ethnic, or socioeconomic group; should bear a disproportionate share of the negative environmental consequences of industrial, municipal, or commercial operations or the execution of federal, state, local, or tribal programs and policies. Neither trail alternative would have the potential for disproportionate health or environmental effects on minorities or low-income populations or communities. Either trail alternative would provide low cost recreational opportunities and positive health benefits to all users.

6.4 Executive Order 11593 (Protection and Enhancement of the Cultural Environment): All activities would be coordinated with Wilmington District Archeologist prior to initiation of ground disturbing activities. Field inspection of trail routes would be completed in areas that have not been surveyed. Additional Phase I or II surveys would be conducted as necessary. Trail routes would be modified as necessary to avoid cultural resource sites. If any cultural or archeological sites are discovered, activities would be immediately suspended pending investigation of the site.

6.5 Executive Order 13045 (Protection of Children from Environmental Health Risks): This order mandates Federal agencies identify and assess environmental health and safety risks that may disproportionately affect children as a result of the implementation of Federal policies, programs, activities, and standards (63 Federal Register 19883-19888). Either trail would provide recreational opportunities to many user groups with children as members including families, school groups, and scouts; but would not disproportionately affect the safety or health of children. All users would experience risks and benefits of active recreation on the proposed trails.

6.6 Executive Order 13186 (Protection of Migratory Birds): Either trail alternative would not result in any significant adverse impacts to migratory bird species or their habitat. There would be no taking of birds. The trails would provide improved access for recreational bird watchers and land managers monitoring bird populations.

7.0 UNAVOIDABLE ADVERSE IMPACTS OF THE PROPOSED ACTION

Construction of trails would result in unavoidable minor direct and secondary adverse impacts to vegetation immediately within and adjacent to the trail foot print. Wildlife in the vicinity of the trail would experience an increase in frequency and level of human disturbance. Soils would be continually disturbed and/or compacted within the foot print of the trail tread.

These impacts are considered minor and localized and would not have significant long term adverse impacts to soil, topography, water quality, nor vegetation and wildlife populations.

8.0 CUMULATIVE IMPACTS

The CEQ regulations (40 CFR 1508.7) require assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions."

Other on-going construction activities around the Lake include the construction of a restroom in Berry Mountain which will involve the installation of a lift station and the placement of required utilities from the facility all the way to the entrance of the park. A new septic system is also being constructed at the Fort Hamby restroom facility as well as, a waterfowl impoundment within Marley Ford WMA. There are no major construction projects that are currently being proposed in the area.

Addition of the proposed shared use trails would result in increased and improved access to public lands leading to increased visitor enjoyment of park resources and recreation opportunities. Use of the trails would provide long term health benefits to regular users. Increases in visitation would have a long term positive impact on the local economy. Development of local and regional trails connecting to W. Kerr Scott Reservoir may be encouraged by trail development. Continued coordination among local and regional entities to develop trail and greenway interconnections would conserve public resources by avoiding duplication of efforts and avoid adverse cumulative impacts to environment caused by entities developing redundant trail facilities.

9.0 RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF THE ENVIRONMENT AND THE ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The local short-term use of the environment is necessary for development of recreational trails consistent with congressionally authorized purposes of W. Kerr Scott Reservoir and would ensure the maintenance and enhancement of long-term productivity for the W. Kerr Scott Reservoir project relative to those purposes. This action meets identified long term recreation needs. These trails would not adversely impact short or long term production of food or fiber. No sensitive environmental resources would be adversely affected in the short or long term. There is a potential for temporary minor impacts to soils, vegetation, and wildlife from the proposed action, but sustainable trail design and adaptive management practices would avoid any long term adverse impacts.

10.0 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Commitment of resources for the proposed trail network is consistent with the congressionally authorized purposes of W. Kerr Scott Reservoir. Construction, operation, and maintenance of the shared use trails would not result in the irreversible or irretrievable

commitment of resources. The trail footprint would naturalize quickly if trail use and maintenance ceased. Graded areas may be restored to natural contours as necessary if abandoned. Infrastructure such as bridges, kiosks, trail markers, and parking areas may also be removed and areas restored as necessary.

11.0 PUBLIC INVOLVEMENT/SCOPING

Corps staff coordinated trail planning with the public, local non-profit organizations, local governments, State agencies, and Federal authorities. Coordination included Friends of W. Kerr Scott Lake, Brushy Mountain Cyclist Club, Yadkin River Greenway, Wilkes Tourism Development Authority, Save Our Wilkes County History Committee, North Carolina Recreation Trails Program, North Carolina Wildlife Resources Commission, US Fish and Wildlife Service, and the National Parks Service. All comments received were considered in the development of this EA.

The proposed W. Kerr Scott Reservoir Trail Network plan map would be incorporated as a supplement to 1983 W. Kerr Scott Reservoir Master Plan Update. The requirement for public and agency input for this master plan supplement (ER 1130-20-550) is satisfied by public and agency involvement in the planning process and the NEPA process.

12.0 LIST OF RECIPIENTS

This EA is being circulated for a 30-day review and comment period to the following concerned agencies and individuals.

Federal Agencies

U.S. Environmental Protection Agency
U.S. Department of Agriculture
Advisory Council on Historic Preservation
Center for Environmental Health
U.S. Department of Interior
U.S. Fish and Wildlife Service
Federal Highway Administration
U.S. Department of Energy
Federal Emergency Management Agency
U.S. Army Corps of Engineers, Wilmington District
National Resources Conservation
U.S. Forest Service

State Agencies

North Carolina Collection, Joyner Library
North Carolina Collection, Wilson Library
University of North Carolina- Wilmington
North Carolina Department of Environment and Natural Resources
Environmental Defense Fund of North Carolina
North Carolina Council of Governments

North Carolina Department of Cultural Resources
North Carolina Department of Transportation
State Library of North Carolina
North Carolina Department of Administration/State Clearinghouse
North Carolina Commission of Indian Affairs
North Carolina Fisheries Association
North Carolina Wildlife Resources Commission
North Carolina Department of Environment and Natural Resources, Mountain Region
Trail Corridor, NC RTP Program

Elected Officials

All North Carolina United States Senators and Local District Congressmen
All Local State Senators and Representatives
Wilkes County Commissioners
Wilkes County Manager
Wilkesboro Mayor

Local Agencies/Entities

The Journal- Patriot
Wilkes County Administrators
Postmaster- Town of Wilkesboro
Tar River Land Conservancy
Friends of W. Kerr Scott Lake
Overmountain Victory Trail Association
Yadkin River Heritage Corridor
Brushy Mountain Cyclist Club
Overmountain Victory NHT
Yadkin River Greenway

Conservation Groups

The Nature Conservancy, NC Chapter
National Wildlife Federation
National Audubon Society
The Wilderness Society

13.0 POINT OF CONTACT

Any comments or questions regarding this Environmental Assessment should be addressed to:

Jessica Mallindine
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69 Darlington Avenue
Wilmington, North Carolina 28403

E-Mail: Jessica.D.Mallindine@usace.army.mil

Phone: (910) 251-4543

Fax: (910) 251-4744

14.0 FINDING

The proposed action should not significantly affect the quality of the human environment; therefore, an Environmental Impact Statement will probably not be required. If this opinion is upheld following circulation of this EA, a Finding of No Significant Impact (FONSI) will be signed and circulated.

15.0 REFERENCES

Appalachian Trail Conference. 2000 Appalachian Trail Design, Construction and Maintenance, 2nd Addition.

Baranski M.J. 2000. Inventory of rare species and natural communities, W. Kerr Scott Reservoir, Wilkes County, North Carolina. Technical Report for US Army Corps of Engineers, Wilmington District, Wilkesboro, NC

Council on Environmental Quality (CEQ). 1979. Code of Federal Regulations (CFR) parts 1500-1508

Crompton, John L. 2007. The Impact of Parks And Open Spaces On Property Taxes. Pages 1-13. The Economic Benefits Of Land Conservation. The Trust For Public Lands, San Francisco CA

International Mountain Bicycling Association. 2004 Trail Solutions: IMBA's Guide to Building Sweet Singletrack

North Carolina Department of Parks and Recreation 2003; North Carolina Statewide Comprehensive Outdoor Recreation Plan (SCORP) 2003-2008, <http://www.ncparks.gov/About/plans/scorp/main.php>

Sherer, Paul M.. 2007. The Benefits of Parks: Why American Needs More City Parks and Open Space. The Trust for Public Land, San Francisco CA

Tracy, Tammy & H. Morris. 1998. Rails-Trails and Safe Communities The Experience on 372 Trails. Rails to Trails Conservancy, Washington DC.

United States Army Corps of Engineers (USACE). 1983 W. Kerr Scott Reservoir Master Plan Update, Design Manual No. 11 November 1983

United States Army Corps of Engineers (USACE). 1988. Engineer Regulations 200-2-2 – Procedures for Implementing NEPA

United States Army Corps of Engineers (USACE). 1996 Engineer Pamphlet 1130-2-550 - Recreation Operations and Maintenance Guidance and Procedures

United States Army Corps of Engineers (USACE) 1998 - Memorandum of Understanding between US Department of Agriculture – Forest Service, US Department of the Interior – Bureau of Land Management, Bureau of Reclamation; Department of the Army – US Army Corps of Engineers and Tread Lightly, Incorporated.
<http://corpslakes.usace.army.mil/partners/tread/lightly.html>

United States Army Corp of Engineers 2002 - Memorandum of Understanding Between the United States Army Corps of Engineers and the International Mountain Bicycling Association
<http://corpslakes.usace.army.mil/partners/imba/imba.html>

United States Fish and Wildlife Service – Information on Threatened and Endangered Species Program – Species Profile; Bog Turtle (*Clemmys muhlenbergii*),
http://www.fws.gov/asheville/htmls/recoveryandlistedspecies/species_sites/bog_turtle.html

United States Forest Service. 2007. Trail Construction and Maintenance Notebook.



US Army Corps
of Engineers
Wilmington District

W. Kerr Scott Dam and Reservoir

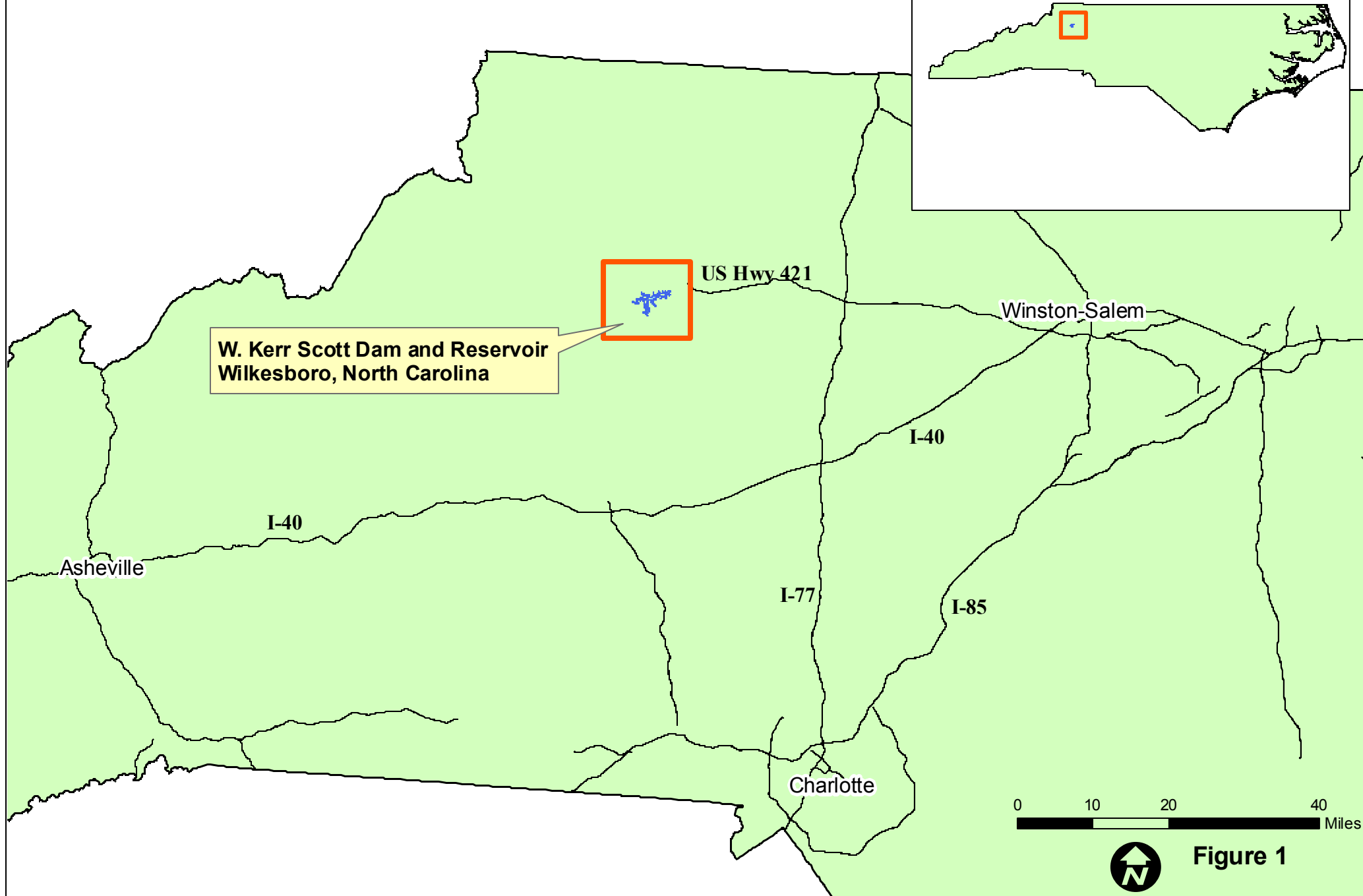
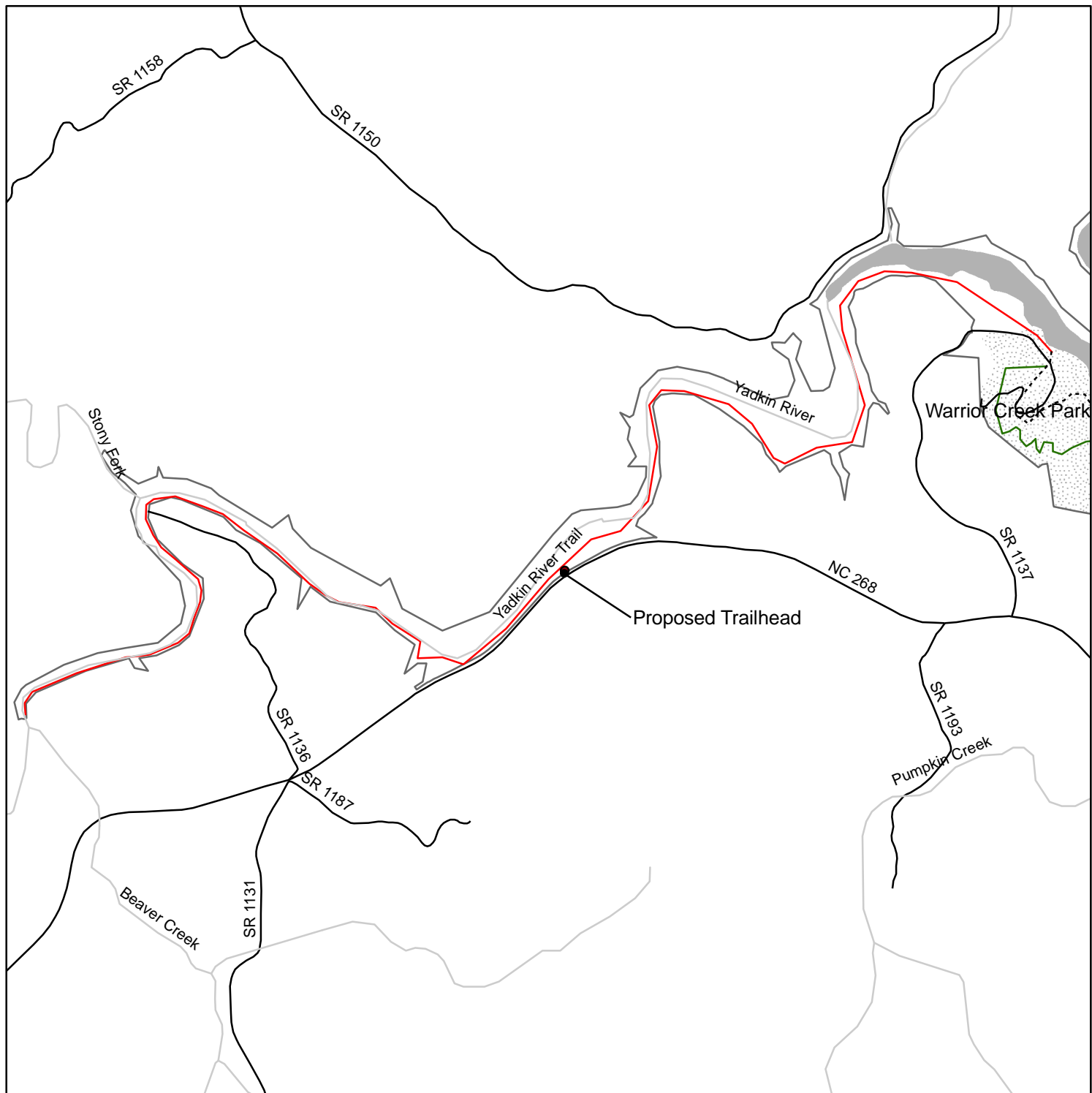


Figure 1



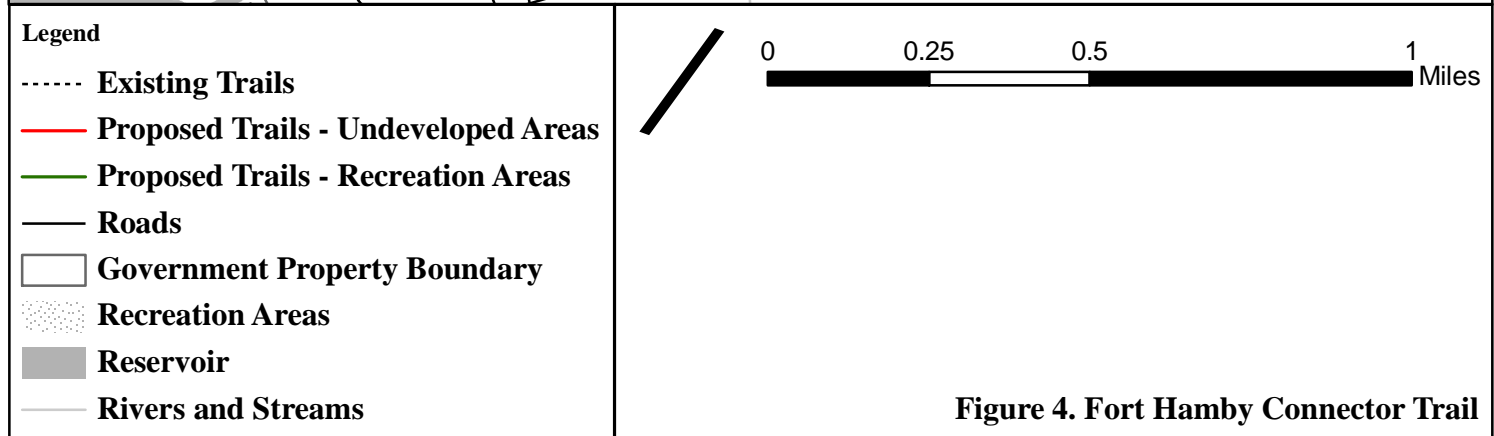
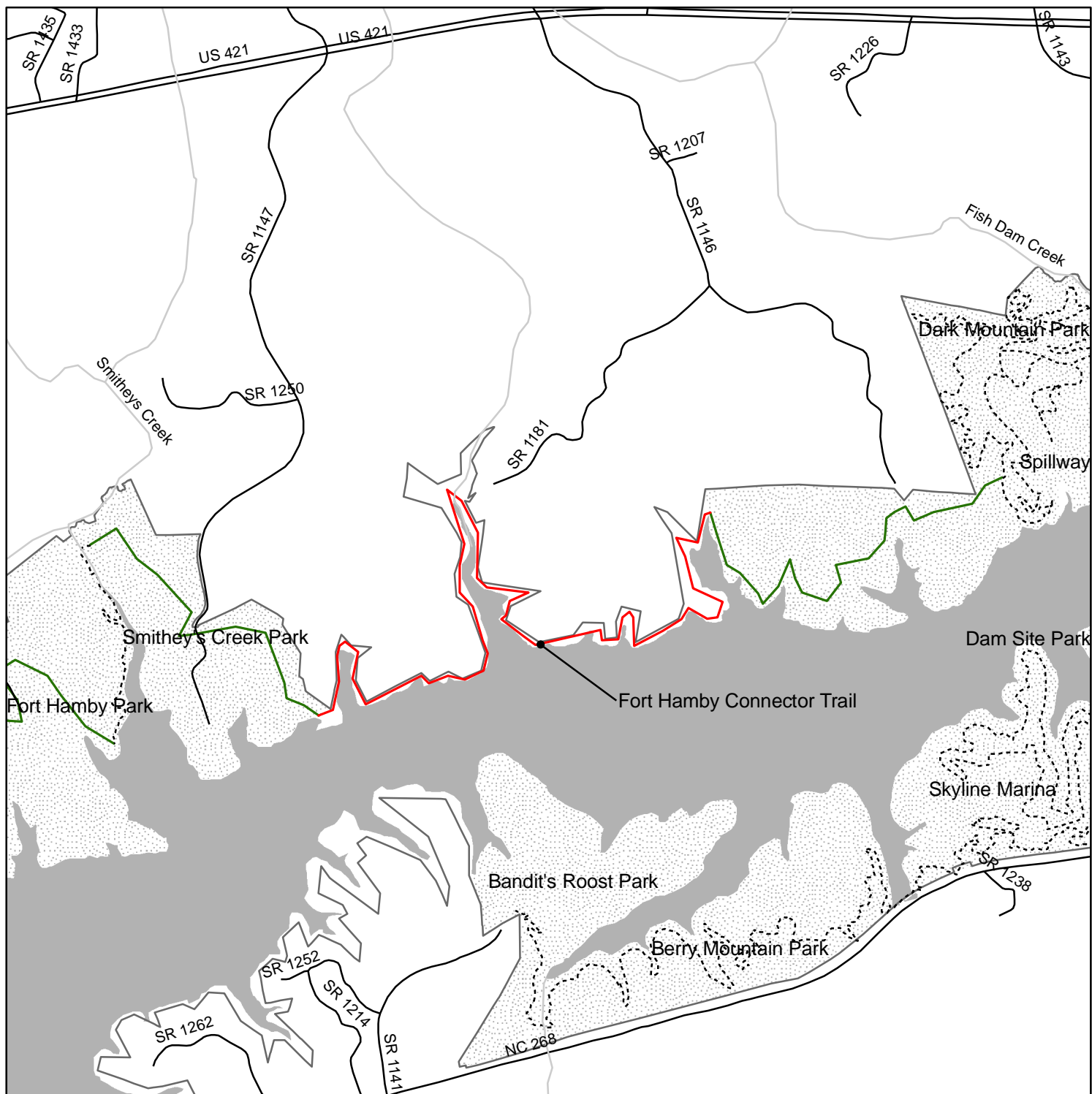
Legend

- Existing Trails
- Proposed Trails - Undeveloped Areas
- Proposed Trails - Recreation Areas
- Roads
- Government Property Boundary
- Recreation Areas
- Reservoir
- Rivers and Streams



0 0.25 0.5 1 Miles

Figure 3. Proposed Yadkin River Trail



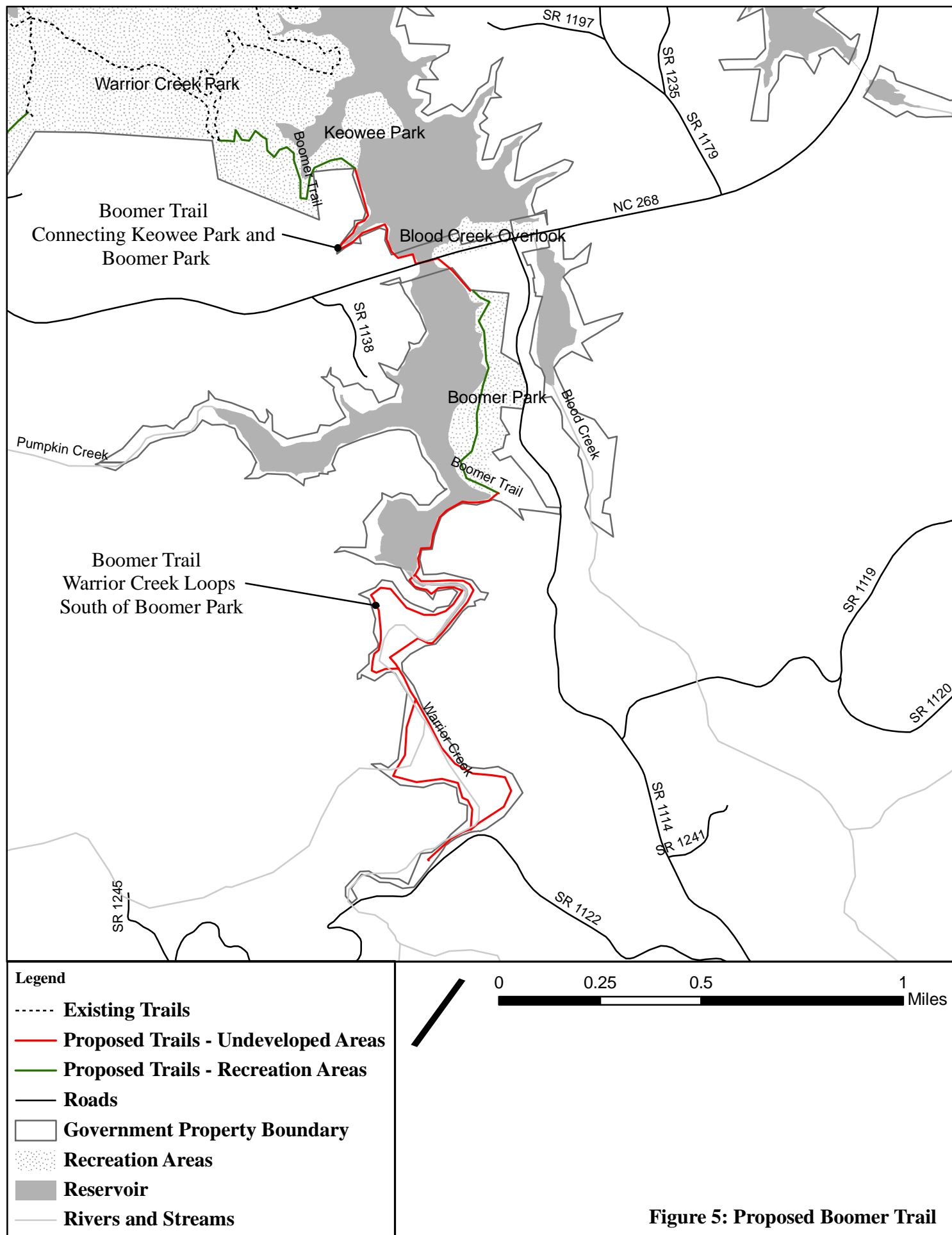
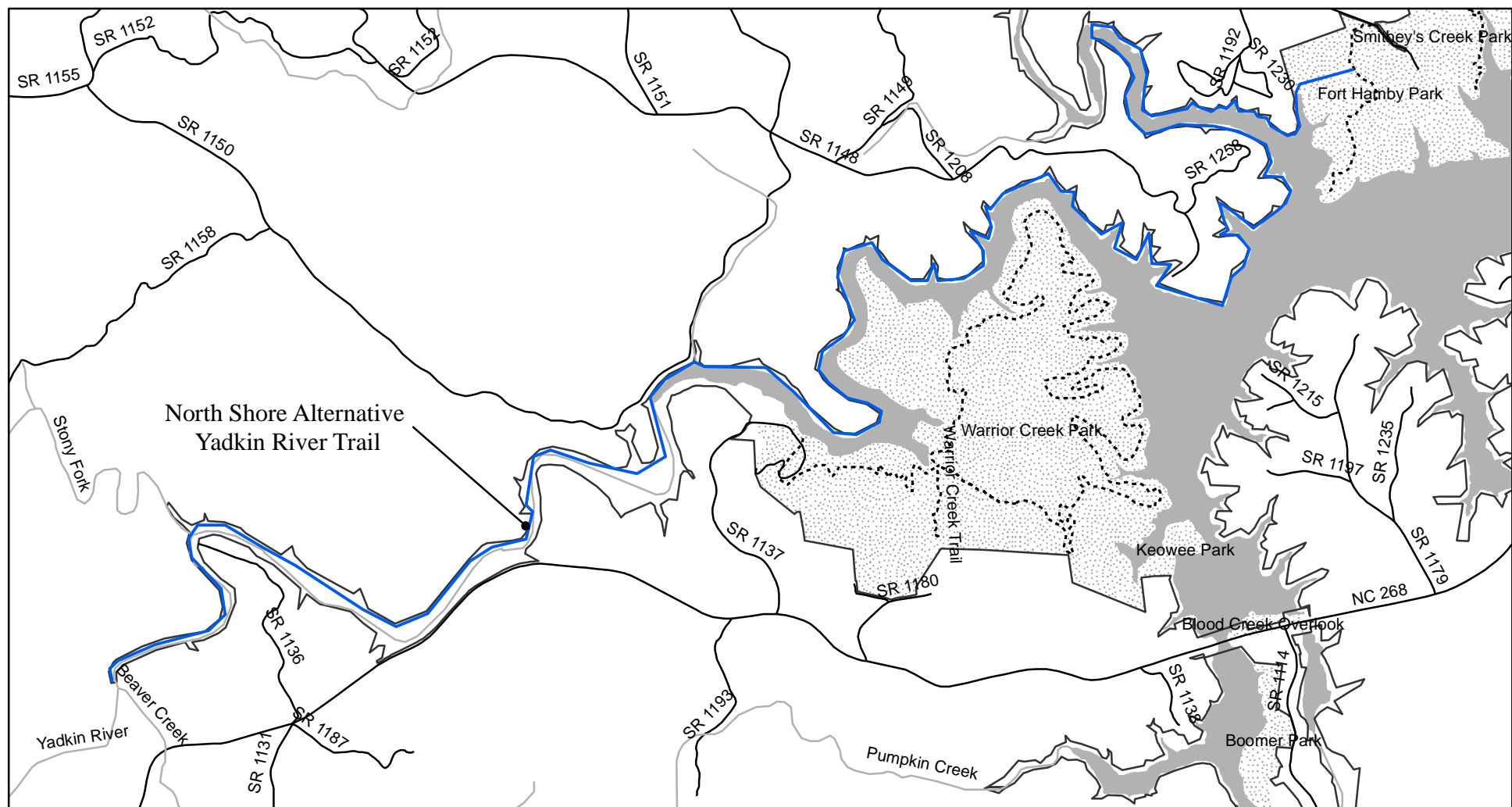


Figure 5: Proposed Boomer Trail



Legend

- Yadkin River Trail - North Shore Alternative
- - - - - Existing Trails
- Roads
- Government Property Boundary
- Recreation Areas
- Reservoir
- Rivers and Streams



Figure 6. North Shore Alternative - Yadkin River Trail